

## PACKET PROCESSOR WITH PROGRAMMABLE APPLICATION LOGIC

## ABSTRACT

A data communication switch includes a backplane and  
5 multiple packet switching controllers. At least one packet  
switching controller includes programmable application logic for  
generating application data for a packet. The application logic  
is contained in key builder and lookup table of an application  
engine. The key builder contains one or more schema programs  
10 for generating keys and key controls using classification  
information and header data of inbound packets. The schema  
programs can be loaded onto the key builder during fabrication  
of the packet switching controller or in field. The keys and  
key controls are used to lookup the application data from the  
15 lookup table.